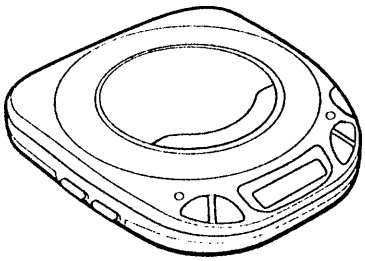
aiwa
SERVICE

# XP-V410 YJ(S)
# XP-V411 AHR(LL) AHC(S)
AHA(S) ALH(S)
# XP-V416C ALH(S)



SERVICE MANUAL

COMPACT DISC PLAYER BASIC CD MECHANISM : DA23L

SPECIFICATIONS

Tracking system	3-beam laser
Laser pickup	Semiconductor laser
D/A conversion	4-times oversampling digital filter + 1-bit DAC
Frequency response	20 – 20,000 Hz (47 k ohms)
Output	PHONES/LINE OUT jack (stereo mini-jack)
Maximum output	10 mW + 10 mW (16 ohms at 1 kHz) 500 mV (47 k ohms at 1 kHz)
Power supply	DC 3 V using two LR6 (size AA) alkaline batteries DC 2.4 V using two commercially available rechargeable batteries (Ni-Cd 1.2 V 700 mAh) AC house current using the supplied AC adaptor
Maximum outside dimensions	128 (W) × 28 (H) × 144.5 (D) mm (5 1/8 × 1 1/8 × 5 3/4 in.) (excluding projecting parts and controls)
Weight	Approx. 220 g (7.7 oz.) excluding batteries

- Design and specifications are subject to change without notice.

aiwa

S/M Code No. 09-003-342-6N1

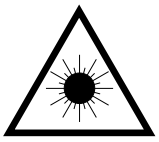
DATA

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynling laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

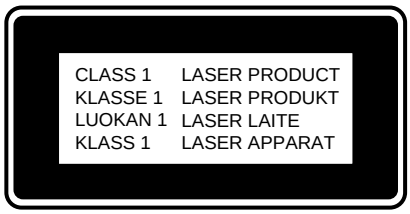
ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserstråling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

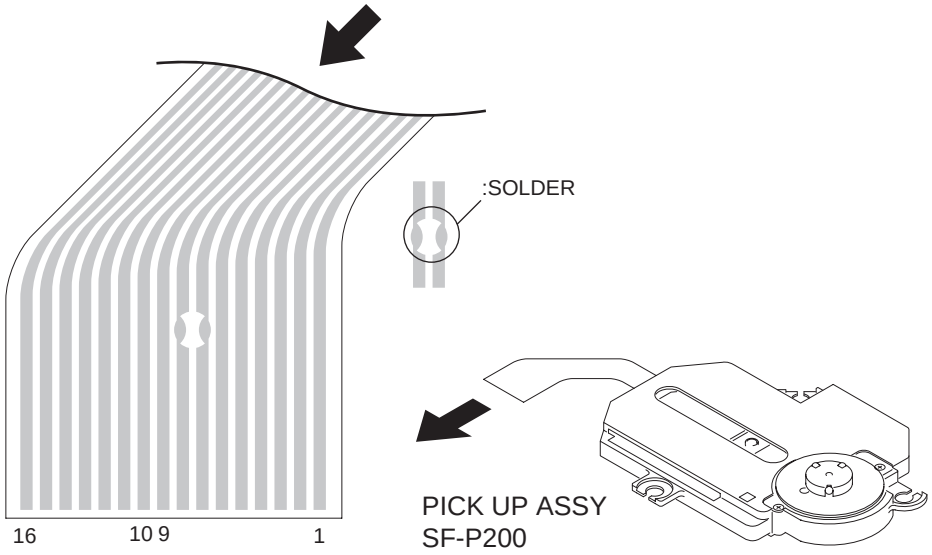
This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.



Precaution to replace Optical block (SF-P200)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in the right figure.



ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

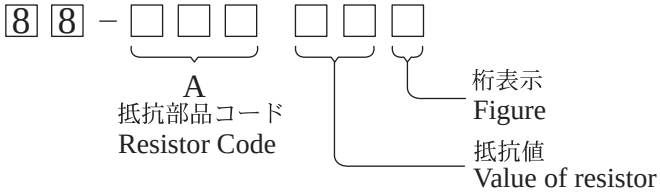
REF. NO	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-A21-082-040		C-IC,BA6655AFV
	8A-HCH-602-010		C-IC,MN101C439-AD
	87-A21-446-010		C-IC,MN662782RPT1
	87-A21-568-010		C-IC,GLT441M04
	87-A21-578-040		C-IC,AN8838NSB
	87-A21-543-040		C-IC,NJU7012
	87-A21-521-040		C-IC,BH6517FS
	87-A21-085-040		C-IC,TA2120FN
TRANSISTOR			
	89-211-323-080		C-TR,2SB1132R
	87-A30-332-040		C-TR,CPH3106
	87-A30-333-040		C-TR,CPH3206
	87-026-608-080		C-TR,DTC 123 JK
	89-111-625-080		TR,2SA1162 (0.15W)
	89-416-643-080		C-TR,2SD1664R
	89-327-125-080		CHIP TR,2SC2712GR
	87-026-680-080		C-TR,IMH4A
	87-026-268-080		C-TR,RN2411
	87-026-239-080		TR,DTC114TK (0.2W)
	89-324-121-080		C-TR,2SC2412K
	87-026-235-080		CHIP-TR,DTC114EK
DIODE			
	87-A40-614-040		C-DIODE,SFPB-72
	87-020-591-080		C-ZENER,02CZ 11Y
	87-A40-554-040		C-DIODE,RB491D
	87-020-331-080		CHIP-DIODE,DAN202K
	87-002-882-080		C-DIODE,RB425D
MAIN C.B			
C101	87-010-060-040		CAP,E 100-16
C102	87-010-197-080		CAP, CHIP 0.01 DM
C103	87-010-197-080		CAP, CHIP 0.01 DM
C104	87-A12-158-040		CAP,E 100-4 M 7L SRA
C105	87-012-156-080		C-CAP,S 220P-50 CH
C106	87-010-483-040		CAP,E 220-4 7L SRA
C107	87-010-194-080		CAP, CHIP 0.047
C108	87-010-178-080		CHIP CAP 1000P
C109	87-A12-158-040		CAP,E 100-4 M 7L SRA
C110	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C111	87-A10-505-080		CAP,E 220-6.3 SF
C112	87-010-805-080		CAP, S 1-16
C113	87-010-196-080		CHIP CAPACITOR,0.1-25
C301	87-A10-488-040		CAP,E 47-4 7L SR
C302	87-010-197-080		CAP, CHIP 0.01 DM
C303	87-010-196-080		CHIP CAPACITOR,0.1-25
C304	87-010-196-080		CHIP CAPACITOR,0.1-25
C305	87-010-197-080		CAP, CHIP 0.01 DM
C306	87-010-197-080		CAP, CHIP 0.01 DM
C307	87-010-197-080		CAP, CHIP 0.01 DM
C308	87-010-178-080		C-CAP,1000P-50 K B
C309	87-010-196-080		CHIP CAPACITOR,0.1-25
C401	87-016-557-040		CAP,E 100-6.3 SF
C402	87-010-196-080		CHIP CAPACITOR,0.1-25
C403	87-015-677-040		CAP,E 100-6.3 7L
C405	87-010-196-080		CHIP CAPACITOR,0.1-25
C406	87-A11-550-080		C-CAP,S 820P-50 K B
C407	87-010-198-080		CAP, CHIP 0.022
C408	87-016-460-080		C-CAP,S 0.22-16 B
C409	87-016-526-080		C-CAP,S 0.47-16 BK
C410	87-010-197-080		CAP, CHIP 0.01 DM
C411	87-010-196-080		CHIP CAPACITOR,0.1-25
C412	87-A12-158-040		CAP,E 100-4 M 7L SRA
C414	87-010-318-080		C-CAP,S 47P-50 CH
C415	87-010-196-080		CHIP CAPACITOR,0.1-25
C417	87-010-318-080		C-CAP,S 47P-50 CH
C418	87-010-312-080		C-CAP,S 15P-50 CH
C419	87-010-312-080		C-CAP,S 15P-50 CH
C420	87-015-785-080		C-CAP, 0.1-25 Z F
C421	87-010-196-080		CHIP CAPACITOR,0.1-25
C422	87-010-196-080		CHIP CAPACITOR,0.1-25
C451	87-010-196-080		CHIP CAPACITOR,0.1-25
C501	87-A12-158-040		CAP,E 100-4 M 7L SRA
C502	87-010-196-080		CHIP CAPACITOR,0.1-25
C504	87-010-196-080		CHIP CAPACITOR,0.1-25
C505	87-012-365-080		C-CAP,S 0.027-25VBK
C506	87-012-156-080		C-CAP,S 220P-50 CH
C507	87-010-321-080		CHIP CAPACITOR,82P(J)
C508	87-010-321-080		CHIP CAPACITOR,82P(J)
C509	87-A11-550-080		C-CAP,S 820P-50 K B
C510	87-A12-158-040		CAP,E 100-4 M 7L SRA
C511	87-010-196-080		CHIP CAPACITOR,0.1-25
C512	87-A10-488-040		CAP,E 47-4 7L SR
C513	87-010-196-080		CHIP CAPACITOR,0.1-25
C514	87-012-365-080		C-CAP,S 0.027-25VBK
C515	87-012-365-080		C-CAP,S 0.027-25VBK
C516	87-010-196-080		CHIP CAPACITOR,0.1-25
C518	87-010-312-080		C-CAP,S 15P-50 CH
C520	87-A10-488-040		CAP,E 47-4 7L SR
C521	87-012-349-080		C-CAP,S 1000P-50 CH
C522	87-010-805-080		CAP, S 1-16
C523	87-010-805-080		CAP, S 1-16
C524	87-010-154-080		CAP CHIP 10P
C601	87-A12-158-040		CAP,E 100-4 M 7L SRA
C602	87-015-785-080		C-CAP, 0.1-25 Z F
C603	87-010-805-080		CAP, S 1-16
C604	87-010-197-080		CAP, CHIP 0.01 DM
C605	87-010-196-080		CHIP CAPACITOR,0.1-25
C606	87-010-196-080		CHIP CAPACITOR,0.1-25
C607	87-010-197-080		CAP, CHIP 0.01 DM
C610	87-010-805-080		CAP, S 1-16
C701	87-A12-158-040		CAP,E 100-4 M 7L SRA
C702	87-010-854-080		C-CAP,S 560PCH
C703	87-010-854-080		C-CAP,S 560PCH
C706	87-012-368-080		C-CAP,S 0.1-50 F
C707	87-A10-826-080		C-CAP,S 1-10 K B
C708	87-A10-826-080		C-CAP,S 1-10 K B
C709	87-A10-826-080		C-CAP,S 1-10 K B
C710	87-015-681-040		E/CAP 10-16
C711	87-A10-488-040		CAP,E 47-4 7L SR
C712	87-012-141-080		CHIP-CAPACITOR,0.22-16F
C713	87-012-368-080		C-CAP,S 0.1-50 F
C714	87-015-696-040		CAP,E 2.2-50 SRA
C715	87-015-681-040		E/CAP 10-16
C716	87-012-368-080		C-CAP,S 0.1-50 F
C717	87-012-368-080		C-CAP,S 0.1-50 F
C718	87-010-483-040		CAP,E 220-4 7L SRA
C719	87-010-483-040		CAP,E 220-4 7L SRA
C720	87-010-178-080		CHIP CAP 1000P
C721	87-010-178-080		CHIP CAP 1000P
C722	87-012-368-080		C-CAP,S 0.1-50 F
C723	87-010-197-080		CAP, CHIP 0.01 DM
CN501	87-A61-104-010		CONN,16P H WHITE 52089-1610
CN601	87-009-411-010		CONN,6P ZH V
FB701	87-A50-623-080		C-COIL,BK2125HS102
FB704	87-A50-623-080		C-COIL,BK2125HS102
J101	87-A60-421-010		JACK,DC HEC3600 BLK 6
J701	85-HC5-616-010		JACK,3.5 ST W/R GRN
L101	87-005-770-080		COIL,47UH 7607
L301	87-A50-367-080		C-COIL, 10UH LQG21F
L401	87-A50-556-080		C-COIL, 47UH K LQH3C
L402	87-A50-440-080		C-COIL, 100UH K LQH3C34
L501	87-A50-367-080		C-COIL, 10UH LQG21F
L502	87-A50-367-080		C-COIL, 10UH LQG21F
L601	87-A50-524-080		COIL,470UH LHL06NB

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
LCD101	8A-HC7-602-010		LCD,AHC-7
R115	87-022-525-080		C-RES,S 20K-1/10W F
R116	87-022-355-080		C-RES,S10K-1/10W F
S301	87-A90-163-010		SW,SL1-1-2 HSW1060
S302	87-A91-742-010		SW,SL 4-1-3 HSW2061-010010
S303	87-A91-622-010		SW,MICRO PV1102
S304	87-A90-095-080		SW,TACT EVQ11G04M
S305	87-A90-095-080		SW,TACT EVQ11G04M
S306	87-A90-095-080		SW,TACT EVQ11G04M
S307	87-A90-095-080		SW,TACT EVQ11G04M
S308	87-A90-095-080		SW,TACT EVQ11G04M
S309	87-A90-095-080		SW,TACT EVQ11G04M
VR701	87-A90-462-010		VR,RTRY 30KCX2 H RK14J12A0
X401	87-A70-202-080		C-VIB,CER 16.93MHZ CSACV-MXJ04

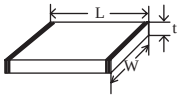
- Regarding connectors, they are not stocked as they are not the initial order items.
  The connectors are available after they are supplied from connector manufacturers upon the order is received.

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

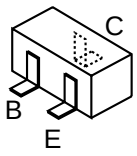
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



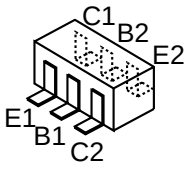
チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code：A
1/16W	1005	±5%	CJ		1.0	0.5	0.35	104
1/16W	1608	±5%	CJ		1.6	0.8	0.45	108
1/10W	2125	±5%	CJ		2	1.25	0.45	118
1/8W	3216	±5%	CJ		3.2	1.6	0.55	128

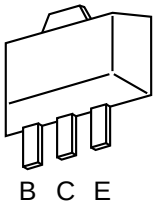
TRANSISTOR ILLUSTRATION



2SA1162
2SC2412
2SC2712
CPH3106
CPH3206
DTC114EK
DTC114TK
DTC123JK
RN2411

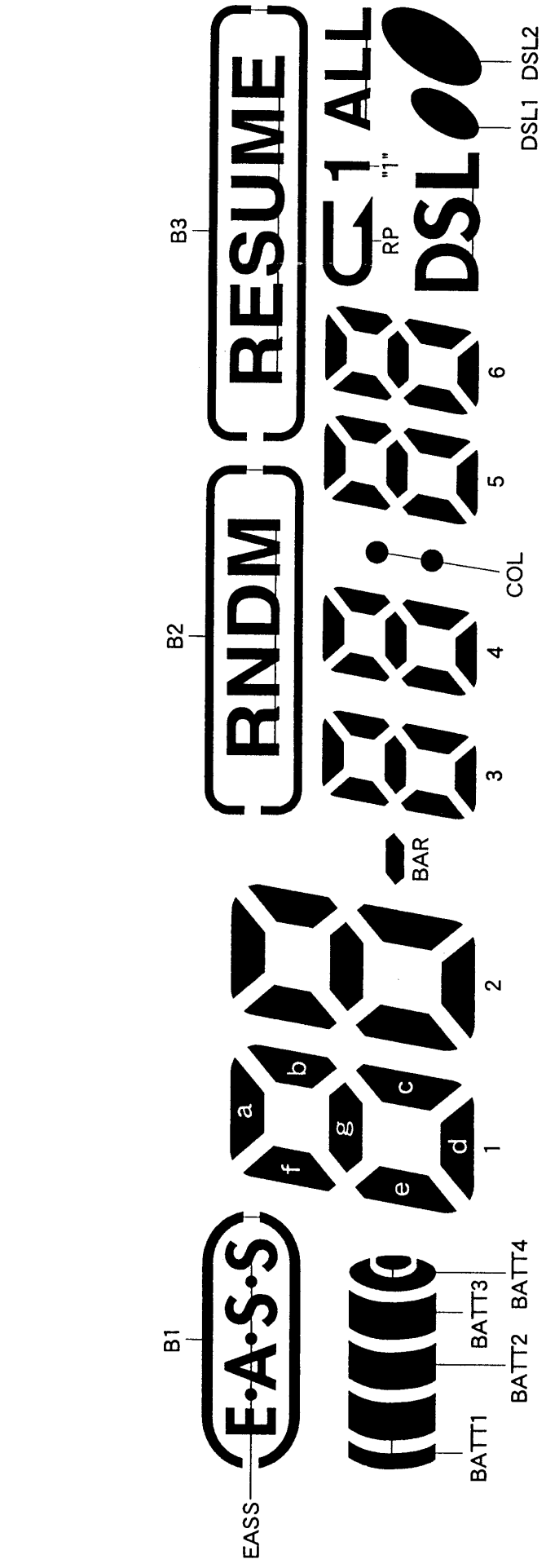


IMH4A

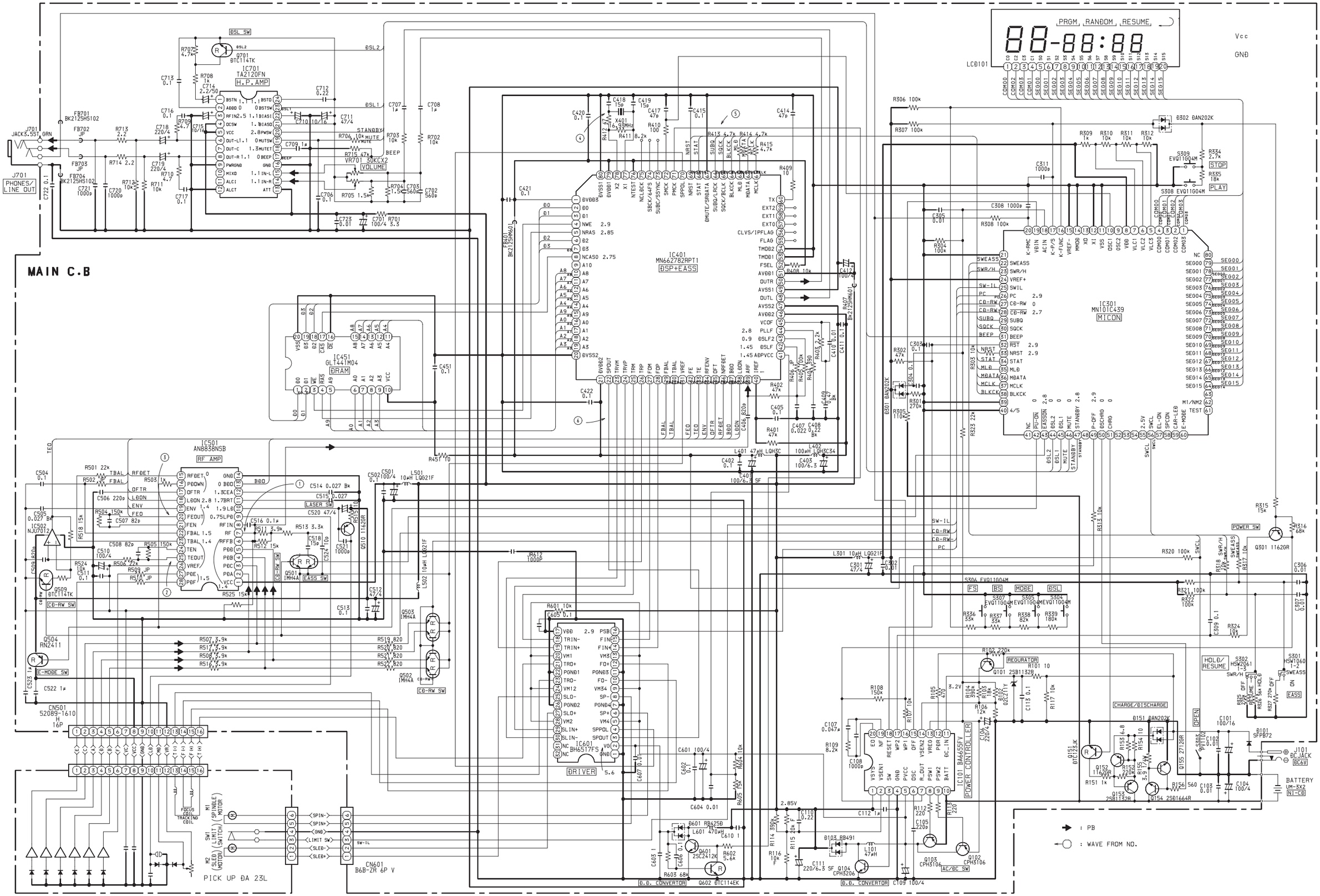


2SB1132
2SD1664

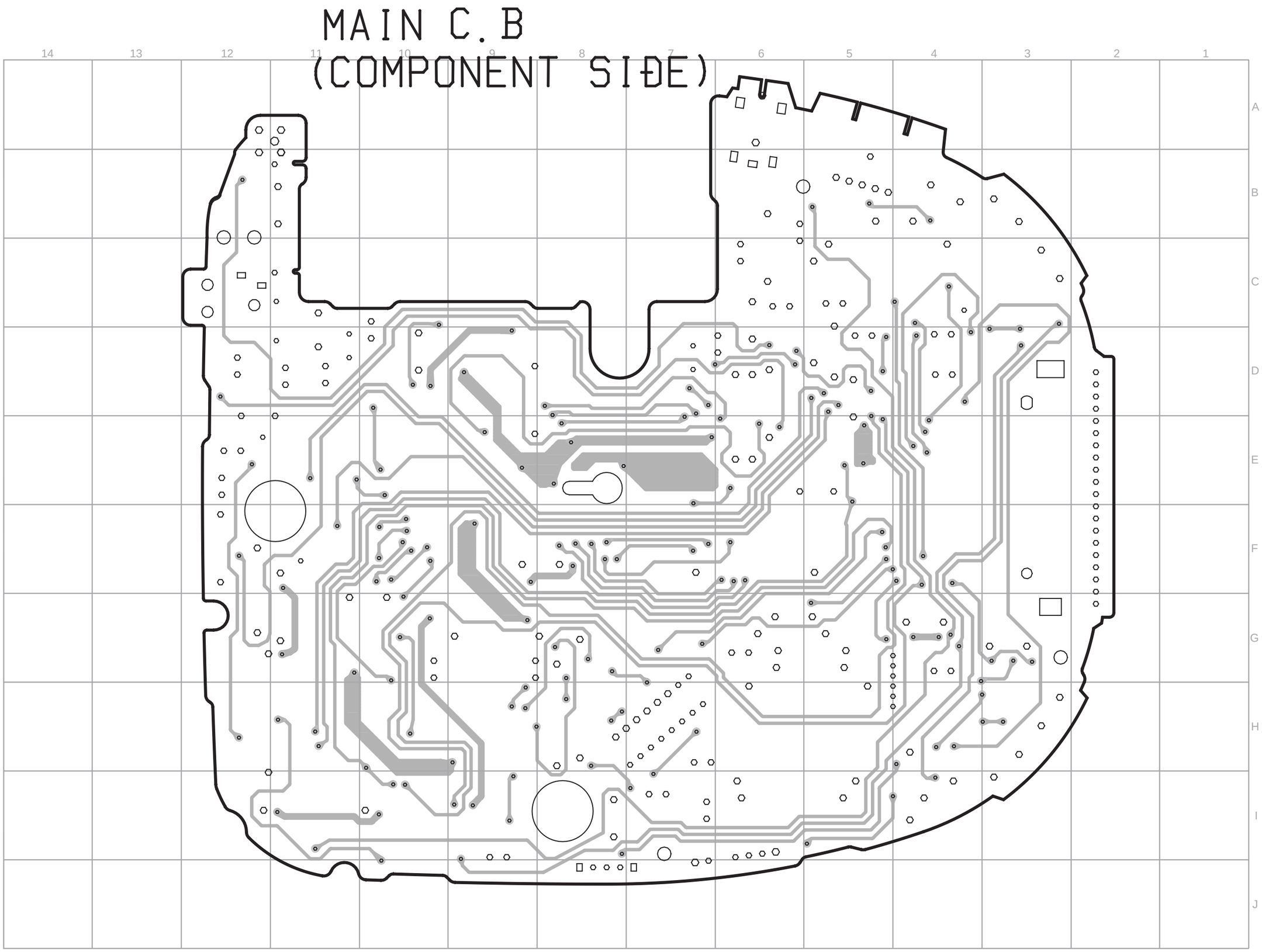
LCD DISPLAY
LCD, AHC-7



No	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
COM0	COM0	---	---	---	BATT2	B1	RNDM	1a	---	2a	BAR	3a	---	4a	COL	5a	B2	6a	B3	RESUME
COM1	---	---	---	COM1	BATT1	EASS	1f	1b	2f	2b	3f	3b	4f	4b	5f	5b	6f	6b	"1"	ALL
COM2	---	COM2	---	---	BATT3	---	1e	1g	2e	2g	3e	3g	4e	4g	5e	5g	6e	6g	RP	DSL2
COM3	---	---	COM3	---	BATT4	---	1d	1c	2d	2c	3d	3c	4d	4c	5d	5c	6d	6c	DSL	DSL1

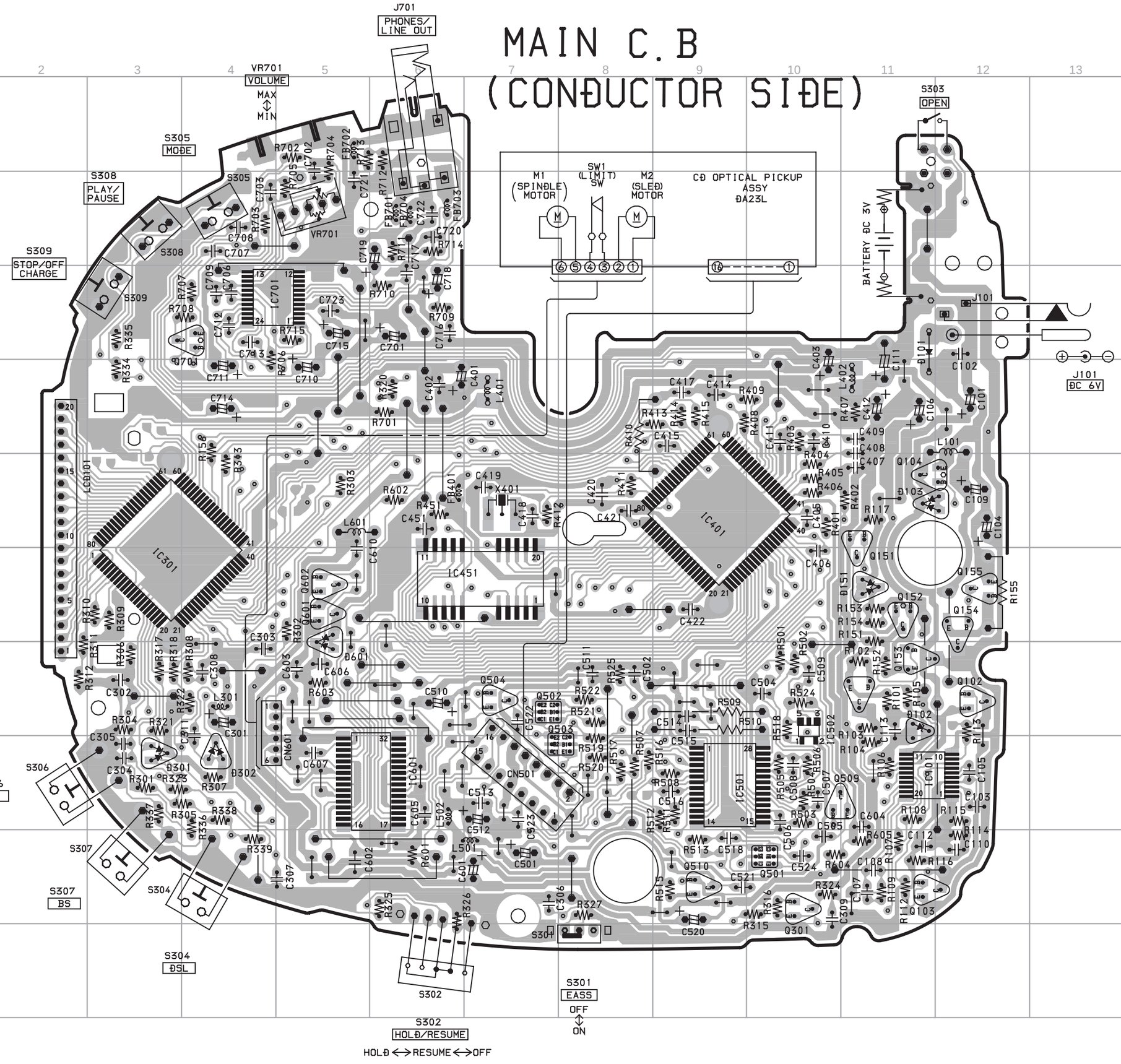

MAIN C.B
PICK UP ĐA 23L
IC701 TA2120FN H.P.AMP
IC401 MN662782RPT1 ĐSP+EASS
IC451 GL7441M04 DRAM
IC501 AN8838NSB RF AMP
IC502 NJU7012
IC601 BH6517FS DRIVER
IC301 MN101C439 MICON
IC101 BA6655FV POWER CONTROLLER
LCĐ101
PRGM RANĐOM RESUME
J701 JACK3.5ST GRN
PHONES/ LINE OUT
VOLUME
STANDBY MUTE
BEEP
LASER SW
CD-RW SW
EASS SW
E-MODE SW
POWER SW
STOP
PLAY
REGURATOR
CHARGE/DISCHARGE
B.Đ. CONVERTOR
AC/DC SW
OPEN
HOLĐ/ RESUME
BATTERY UM-3X2 NI-CĐ
DC JACK DC6V
CN501 52089-1610 H 16P
CN401 B6B-ZR 6P V
: PB
: WAVE FROM NO.

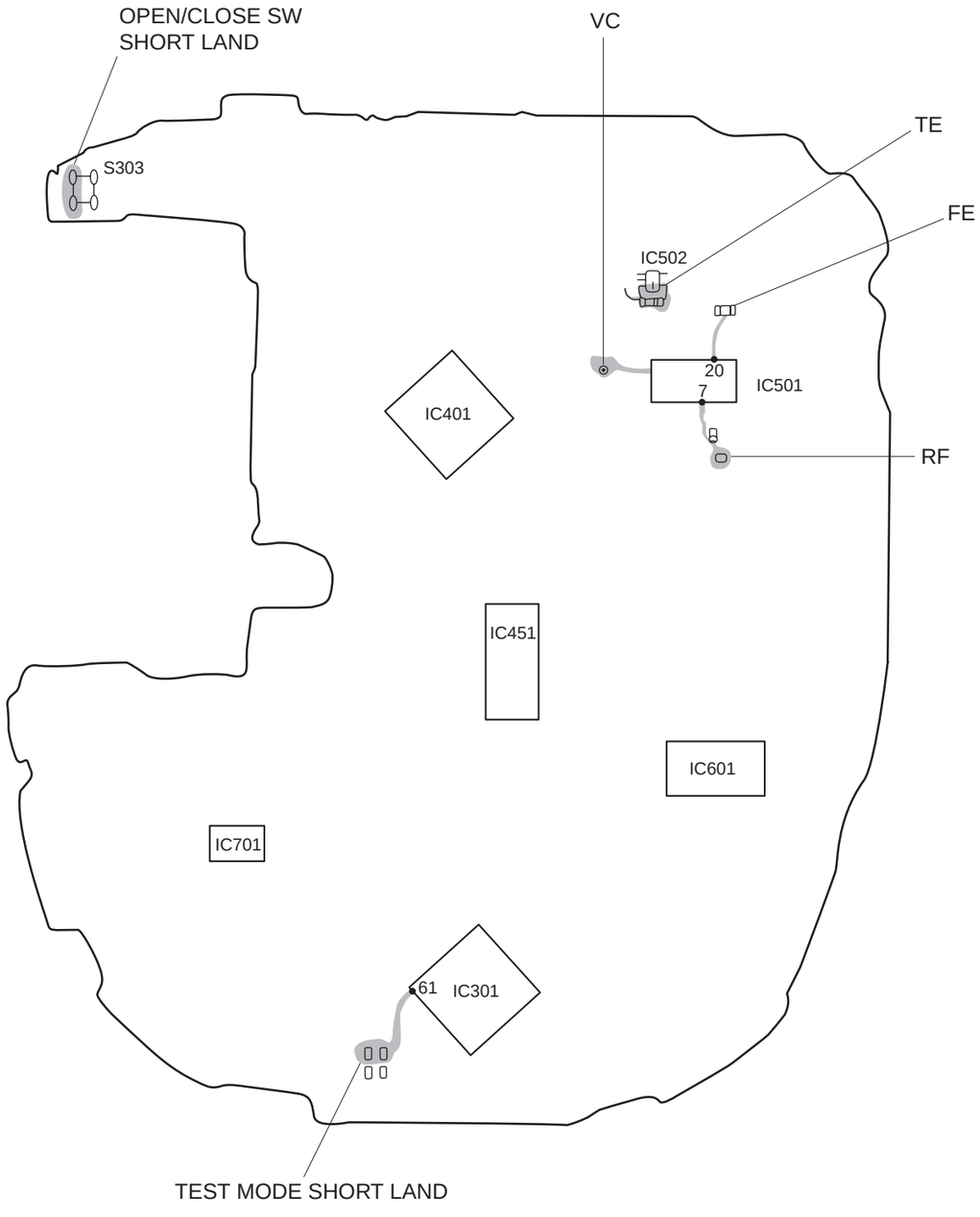
WIRING-1 (MAIN :COMPONENT SIDE)



WIRING-2 (MAIN :CONDUCTOR SIDE)

MAIN C.B
(CONDUCTOR SIDE)





The servo circuit of this model is designed to be adjustment-free and the adjustment value and disc distinction (CD-DA, CD-R and CD-RW) etc. is adjusted by the IC. Therefore the adjustment is performed at each TOC reading. The adjustment conditions in the IC of each servo can be monitored in this test mode.

1. How To Start The Mode

Starting method of the test mode differ depending upon the type of disc being used. This is because the adjustment values of each servo also differ depending upon the type of disc.

When using the CD-DA or CD-R

1) Short-circuit TEST LAND and OPEN/CLOSE SW land.
2) Insert the AC plug to the power outlet and install the CD-DA or CD-R disc.
3) Press the PLAY and STOP buttons in this sequence and read the TOC.

When using the CD-RW

1) Short-circuit the TEST LAND and OPEN/CLOSE SW land.
2) Insert the AC plug to the power outlet and install the CD-RW disc.
3) Press the PLAY, STOP and DSL buttons in this sequence and read the TOC. The LCD should display “CD-r” at this point.

Note 1: If the TOC cannot be read, “ERR” has appeared on the LCD. The following step 2 and 3 can be verified even if the “TOC” cannot be read.

Note 2: By repeatedly pressing the DISPLAY/ENTER button all the LCDs light up and the “TOC” display is repeated.

Note 3: By repeatedly pressing the DSL button the LCD “CD-r” and “CD-d” are repeated.

When the LCD displays “CD-d” →CD-DA, CD-R is selected.
When the LCD displays “CD-r” →CD-RW is selected.

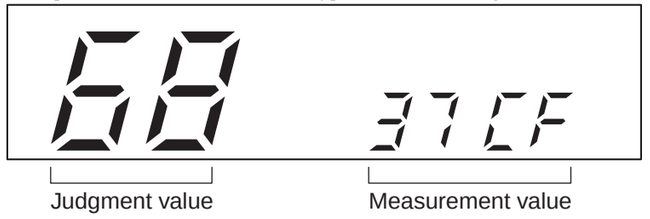
Note 4: The test mode is canceled by disconnecting the AC plug and remove the soldering of short land.

2. DISC distinction (confirmation of the FE wave form)

This mode enables you to perform a confirmation of the disc distinction.
Confirmation method
Press the DSL button and select “CD-d” or “CD-r” (Refer to Note 3).

1) Install the disc.
2) Press the MODE button.

The LCD will change as follows:
Example: Test disc: TCD-782, DISC type select: CD-d Judgment value: 68, Measurement value: 37 CF



* All numerical values are displayed in HEX.

What disc the IC has selected can be understood according to the judgment value.
The decision standard of IC is as follows.

	LCD displays “CD-d”	LCD displays “CD-r”
0 < Judgment value < 10	No disc	No disc
10 < Judgment value < 32	CD-RW	No disc
32 < Judgment value < C8	CD-DA and CD-R	CD-RW
C8 < Judgment value		CD-DA and CD-R

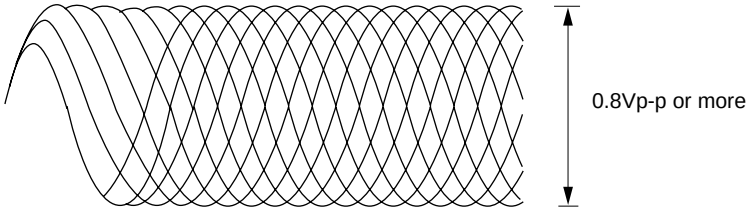
The state of the FE waveform can be also understood from this judgment.

3. Confirmation of Sled movement

By pressing the F.SKIP or B.SKIP button continuously during the TEST MODE, it is possible to transfer the pick-up to either the outer side or inner side.

4. Confirmation of the RF level

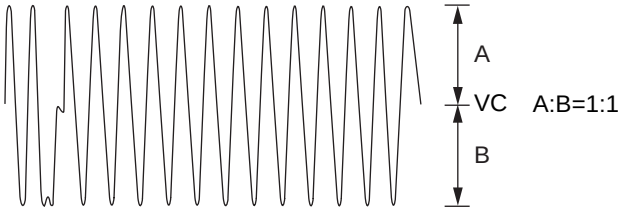
Test point: RF and VC (Vref)
Test disc: TCD-782
Confirm that the RF waveform is as shown below.



VOLT/DIV: 200mV
TIME/DIV: 0.5us

5. Confirmation of Tracking balance

Test point: TE and VC (Vref)
Test disc: TCD-782
Press the DSL button while playing the test disc and confirm the TE waveform is as shown below.

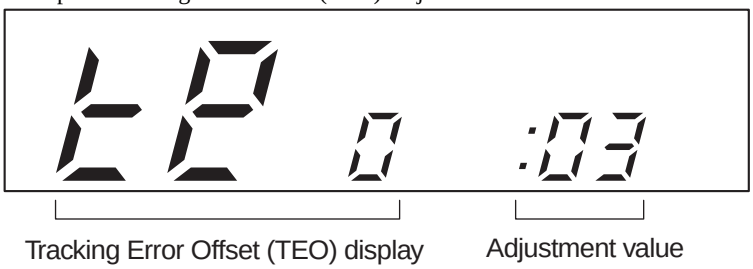


VOLT/DIV: 200mV
TIME/DIV: 2ms

6. Confirmation of each servo

It is possible to confirm the adjustment value of each servo by repeatedly pressing the MODE button while the disc is playing.
The switchover sequence is as stated below.
Confirmation mode off → Focus Bias (FB) → Tracking Balance (TB) → Tracking Gain (TG) → Tracking Error Offset (TEO) → Focus Gain (FG) → Focus Error Offset (FEO) → Confirmation mode off

Example: Tracking Error Offset (TEO) Adjustment value: 03

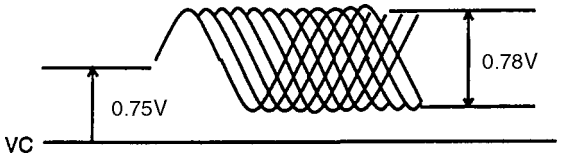


* Adjustment value is displayed in HEX.

WAVE FORM

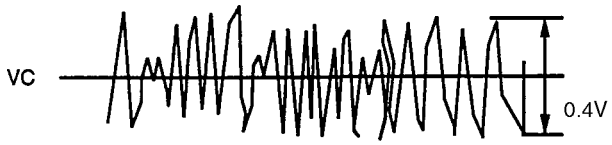
① IC501 Pin ⑦

VOLT/DIV: 0.5V
TIME/DIV: 1µS



② IC501 Pin ㉕

VOLT/DIV: 0.2V
TIME/DIV: 50µS

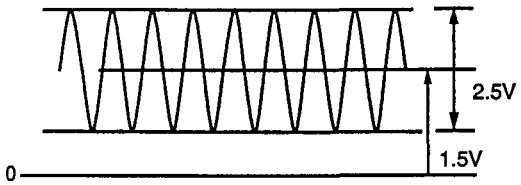


③ IC501 Pin ㉖

VOLT/DIV: 0.1V
TIME/DIV: 2mS

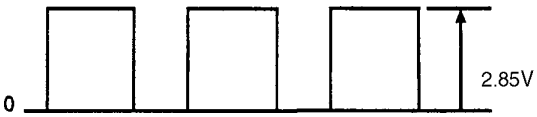
④ IC401 Pin ㉘

VOLT/DIV: 1V
TIME/DIV: 50mS
f=16.93MHz



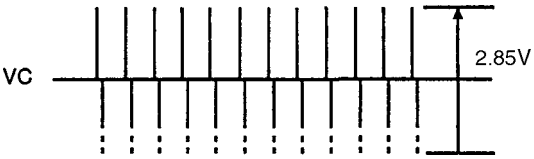
⑤ IC401 Pin ㉑

VOLT/DIV: 2V
TIME/DIV: 5µS
f=44.1kHz



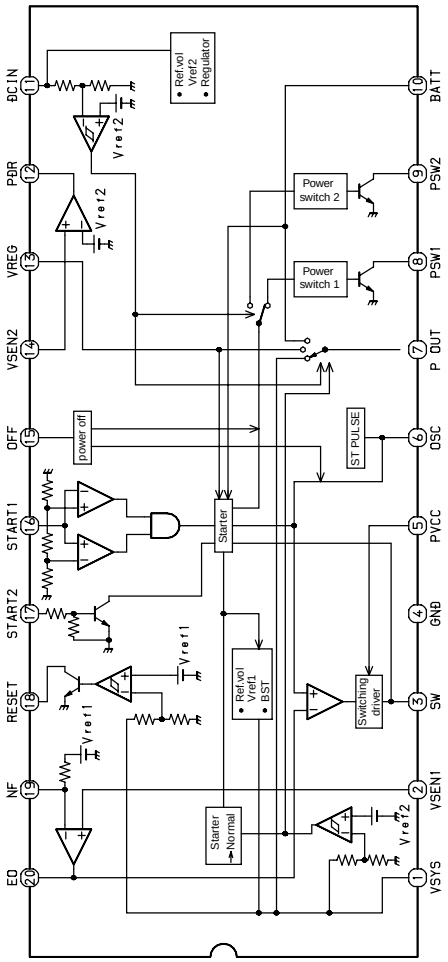
⑥ IC401 Pin ㉒

VOLT/DIV: 1V
TIME/DIV: 5µS

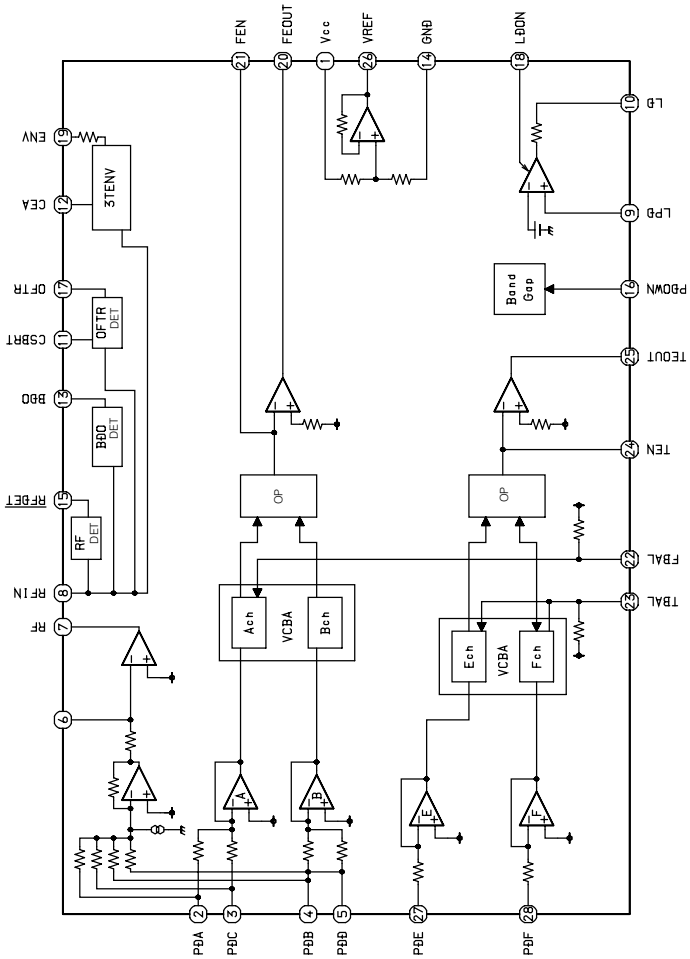


IC BLOCK DIAGRAM

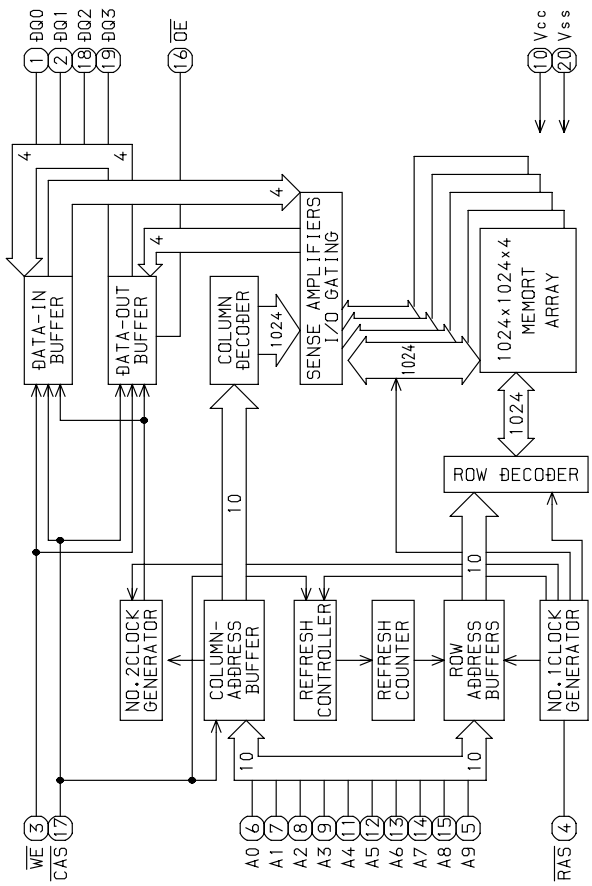
IC, BA6655AFV



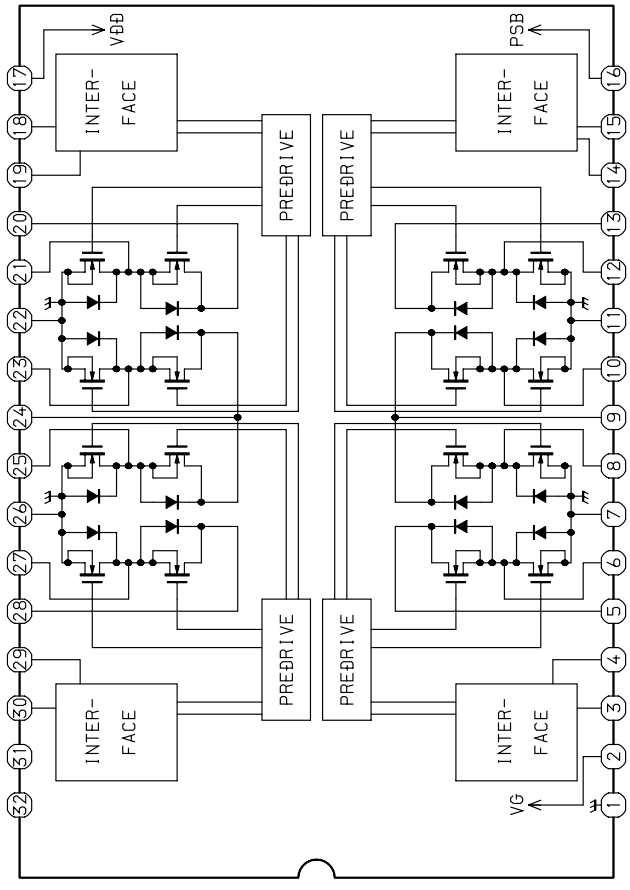
IC, AN8838NSB



IC, GLT441MV4



IC, BH6517FS



IC DESCRIPTION

IC, MN662872RPT1

Pin No.	Pin Name	I/O	Description
1	DVDD3V	I	Power supply for DRAM interface. (pin No. 2 to 19).
2	D0	I/O	DRAM data input/output signal 0.
3	D1	I/O	DRAM data input/output signal 1.
4	NWE	O	DRAM write enable signal.
5	NRAS	O	DRAM RAS control signal.
6	D2	I/O	DRAM data input/output signal 2.
7	D3	I/O	DRAM data input/output signal 3.
8	NCAS0	O	DRAM CAS control signal 0.
9	NCAS1	O	DRAM CAS control signal 1. (when both 1 M and 4 MDRAM are used). DRAM address signal 10. (when 16 MDRAM is used).
10-16	A8-A0	O	DRAM address signal 8-0.
17-19	A1-A3	O	DRAM address signal 1-3.
20	DVSS2	I	Ground for digital circuit.
21	DVDD2	I	Power supply for digital circuit.
22	SPOUT	O	Spindle motor drive signal output. (absolute value output).
23	TRVM	O	Traverse drive output. (positive polarity output).
24	TRVP	O	Traverse drive output. (negative polarity output).
25	TRM	O	Tracking drive output. (positive polarity output).
26	TRP	O	Tracking drive output. (negative polarity output).
27	FOM	O	Focus drive output. (positive polarity output).
28	FOP	O	Focus drive output. (negative polarity output).
29	FBAL	O	Focus balance adjustment output.
30	TBAL	O	Tracking balance adjustment output.
31	VREF	I	DA output block reference voltage. (FBAL, TBAL, DSLF2).
32	FE	I	Focus error signal input. (analog input).
33	TE	I	Tracking error signal input. (analog input).
34	RFENV	I	RF envelope signal input. (analog input).
35	OFT	I	Off-track signal input. H: Off-track.
36	NRFDET	I	RF detection signal input. L: Detection.
37	BDO	I	Drop-out signal input. H: Drop-out.
38	LDON	O	Laser ON signal output. H: ON.
39	ARF	I	RF signal input.
40	IREF	I	Reference current input terminal.
41	ADPVCC	I	AD reference voltage input. (analog input).
42	DSLF	O	Loop filter terminal for DSL.
43	DSLF2	O	For DSL unbalance current correction.
44	PLLF	O	Loop filter terminal for PLL.
45	VCOF	O	Loop filter terminal for jitter free VCO.
46	AVDD2	I	Power supply for analog circuit. (for DSL, PLL, VCOF, AD, DA).
47	AVSS2	I	Ground for analog circuit. (for DSL, PLL, VCOF, AD, DA).
48	OUTL	O	Lch audio output. (Refer to (Note 1) on page 3).

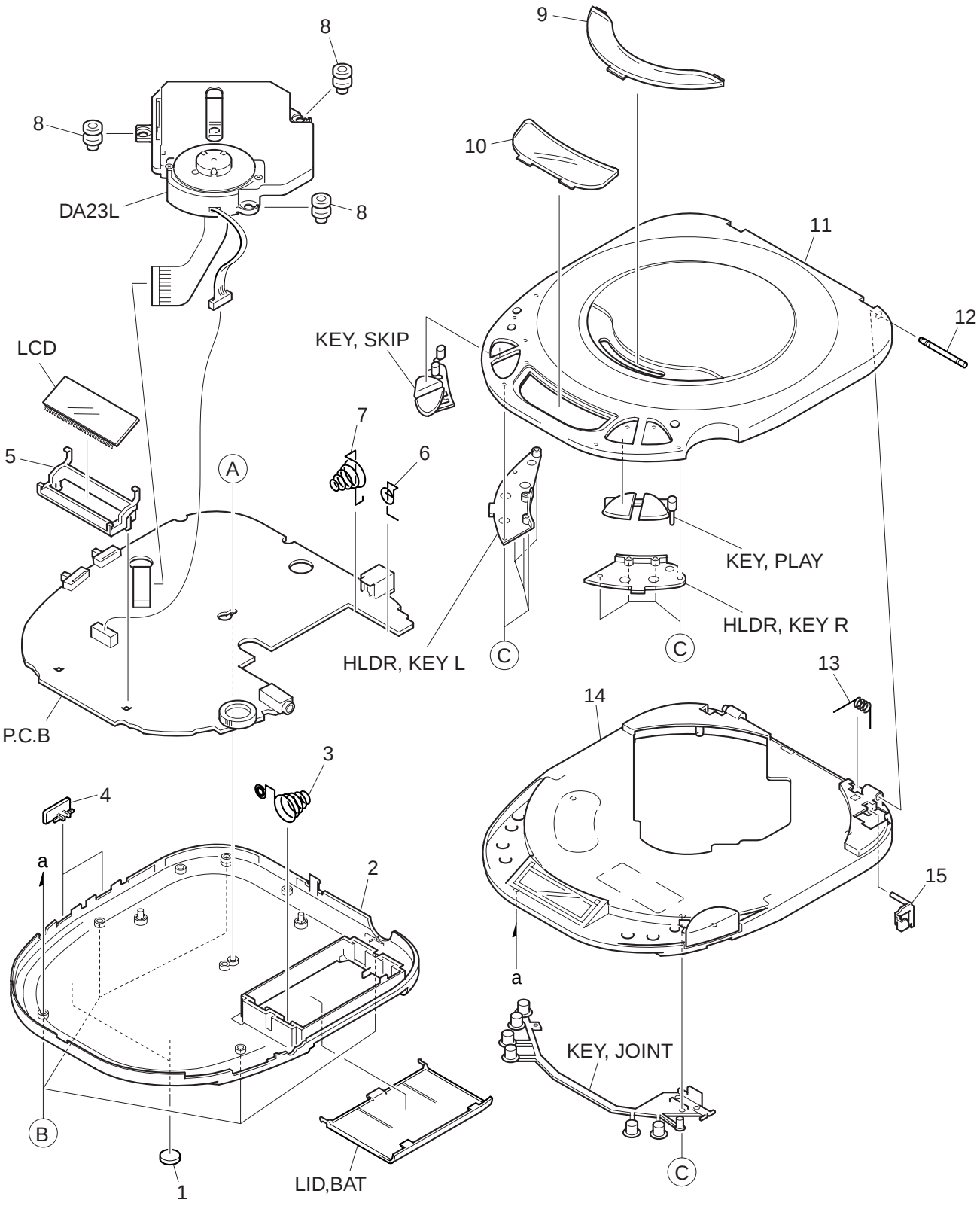
Pin No.	Pin Name	I/O	Description
49	AVSS1	I	Ground for analog circuit. (for audio output block).
50	OUTR	O	Rch audio output. (Refer to (Note 1) on page 3).
51	AVDD1	I	Power supply for analog circuit (for audio output block).
52	FSEL	I	Noise filter ON/OFF switching input. L: ON. H: OFF.
53	TMOD1	I	Terminal mode select input terminal 1. Normal: L.
54	TMOD2	I	Terminal mode select input terminal 2. Normal: L.
55	FLAG	O	Flag signal output.
56	CLVS/IPFLAG	O	Command selection. • Spindle servo phase sync signal output. H: CLV. L: Rough servo. • Interpolation flag signal output.H: Interpolation.
57	EXT0/ISRDATA	I/O	Command selection. • Extended input/output port 0. • SRDATA input.
58	EXT1/ILRCK	I/O	Command selection. • Extended input/output port 1. • LRCK input. H: Lch audio data. L: Rch audio data.
59	EXT2/IBCLK	I/O	Command selection. • Extended input/output port 2. • BCLK input.
60	TX	O	Digital audio interface output signal.
61	MCLK	I	Microprocessor command clock signal input. (Latches data at raising edge.)
62	MDATA	I	Microprocessor command data signal input.
63	MLD	I	Microprocessor command load signal input. L: Load.
64	BLKCK	O	Sub-code block clock signal. fBLKCK=75 Hz (during normal playback)/SYNC signal for CDTEXT (DQSY) fDQSY=300 Hz (during normal playback).
65	SQCK/BCLK	I/O	Command selection. • External clock input for sub-code Q register. • Bit clock output for SRDATA.
66	SUBQ/LRCK	O	Command selection. • Sub-code Q data output. • L, R identification signal output. H: Lch audio data. L: Rch audio data.
67	DMUTE/SRDATA	I/O	Command selection. • Muting input. H: Mute. • Serial data output. (Refer to (Note 1) of page 3.)
68	STAT	O	Status signal. (CRC, RESY, CLVS, NTTSTOP, SQOK, FLAG6, SENSE, NFLOCK, NTLOCK, BSSEL, SUBQ data, CDTEXT data, anti-shock read-out data)
69	NRST	I	Reset input. L: Reset.
70	SPPOL	O	Spindle motor drive signal output (polarity output).
71	PMCK	O	88.2 KHz clock signal output.
72	SMCK	O	4.2336 MHz clock signal output.
73	SUBC/SSYNC	O	Command selection. • Sub-code serial output. • Sector SYNC output.
74	SBCK/64FS	I	Command selection. • Clock input for sub-code serial output. • 64 FS output.
75	NCLDCK	O	Sub-code frame clock signal output. (fCLDCK=7.35 KHz)
76	NTEST	I	Test terminal: Normally H.
77	X1	I	Crystal oscillator circuit input terminal. f=16.9344 MHz.
78	X2	O	Crystal oscillator circuit output terminal. f=16.9344 MHz.
79	DVDD1	I	Power supply for digital circuit.
80	DVSS1	I	Ground for digital circuit.

IC, MN101C439-AD

Pin No.	Pin Name	I/O	Description
1-4	COM3-0	O	LCD common.
5	VLC3	—	—
6	VLC2	—	—
7	VLC1	—	—
8	VDD	—	LCD power supply.
9	OSC2	O	Microprocessor main clock oscillator output.
10	OSC1	I	Microprocessor main clock oscillator input.
11	VSS	—	Ground.
12	XI	I	Sub-clock oscillator input.
13	XO	O	Sub-clock oscillator output.
14	MMOD	I	Processor mode is not used. Connected to VSS.
15	VREF-	—	VSS.
16	K-FUNC	I	Function key input.
17	K-P/S	I	PLAY, STOP KEY input.
18	ACIN	I	AC adapter detection.
19	VDIN	I	Battery voltage detection.
20	K-RMC	I	Wired remote control input.
21	SWDO	I	Digital out ON/OFF input. L= ON.
22	SWEASS	I	Select input of EASS mode. Refer to A/D value table.
23	SWR/H	I	Resume/hold switch input.
24	VREF+	—	VCC.
25	SWIL	I	Limit switch input.
26	PC	O	Power off output of CD servo driver. L= Power off.
27	CD-RW	O	CD-RW playback gain-up select output. H= Gain-up.
28	$\overline{\text{CD-RW}}$	O	CD-RW playback gain-up select output. L= Gain-up.
29	SUBQ	I	H/A power-down output.
30	SQCK	O	Gain-up select output by EASS. During EASS ON= L.
31	BEEP	O	Buzzer output of headphones.
32	RST	—	Microprocessor reset input.
33	NRST	O	DSP reset output.
34	STAT	I	STAT input of DSP.
35	MLD	O	MLD output of DSP.
36	MDATA	O	MDATA output of DSP.
37	MCLK	O	MCLK output of DSP.
38	BLKCK	I	BLKCK input of DSP.
39	RSENSOR	I	Wireless remote control sensor signal input.
40	AHC-4/5	I	Select input of AHC-4 or AHC-5. AHC-4=H. AHC-5=L.
41	—	—	Not used.
42	$\overline{\text{PU-ON}}$	O	Power down output of H/A.
43	$\overline{\text{EASSON}}$	O	Select output of gain-up by EASS. During EASS ON= L.
44	DSL2	O	DSL2 control output of headphones. DSL2= H. DSL1/OFF= L.

Pin No.	Pin Name	I/O	Description
45	DSL1	O	DSL ON control output of headphones. DSL ON= H.
46	MUTE	O	Audio mute output.
47	STANDBY	O	Standby output of headphones. During standby =L. Power on= H.
48	LCDRDO	O	Wired LCD remote control output.
49	P-OFF	O	Power-off output of power supply IC. L= Power off.
50	DSCHRG	O	Discharge output.
51	CHRG	O	Charge output.
52	BAT-F	O	Full indication LED output of battery remaining amount display. L= LED ON.
53	BAT-M	O	Medium indication LED output of battery remaining amount display. L= LED ON.
54	BAT-E	O	Empty indication LED output of battery remaining amount display. L= LED ON.
55	2.5V	O	Not used.
56	SWCL	O	Open/close detection switch input of lid.
57	ELON	O	EL backlight control output.
58	SPCON	O	Spindle PWM control output.
59	CAR_LED	O	Outputs to light button LED of CAR-KIT model. H= Lights.
60	E-MODE	I	Spindle-loss mode. (H= There is no spindle-loss mode).
61	TEST	I	L= Enters TEST mode.
62	M1/NM2	I	Input to select either 10 seconds or 10/40 seconds by AHC-5. H= 10 seconds. L= 10/40 seconds.
63	NC	—	Not used.
64-79	SEG15-0	—	LCD segment output.
80	NC	—	Not used.

MECHANICAL EXPLODED VIEW 1/1



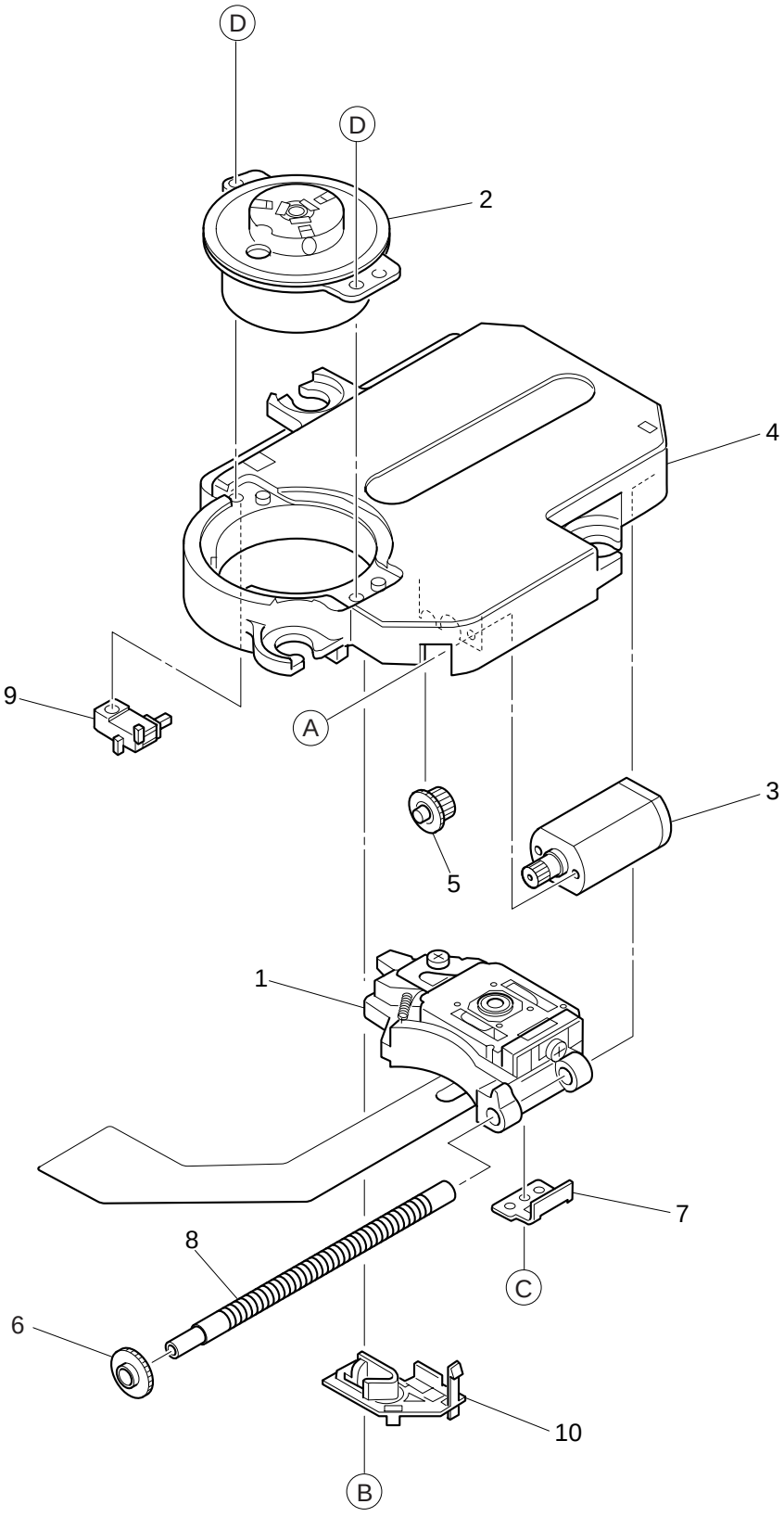
MECHANICAL PARTS LIST 1/1

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	88-HC6-021-010		FOOT, DIA10
2	8A-HCH-014-010		CABI ASSY,BOTTOM 17<EXCEPT AHR>
2	8A-HCH-032-010		CABI ASSY,BOTTOM 17 LL<AHR>
3	87-HC8-205-010		BAT-CONTACT,(+)(-)
4	8A-HC7-012-010		KNOB,SL HOLD
5	8A-HC7-201-010		GUIDE,LCD
6	8A-HC7-206-010		BAT-CONTACT,(+)(HK)
7	8A-HC7-207-010		BAT-CONTACT,(-)(HK)
8	8Z-HC1-225-010		DMPR,MECHA(SP)
9	8A-HC7-007-010		WINDOW,CD (S)(LL)
10	8A-HCH-060-010		WINDOW,DISPLAY<410>
10	8A-HCH-061-010		WINDOW,DISPLAY<411>
10	8A-HCH-063-010		WINDOW,DISPLAY<416>
11	8A-HCH-016-010		LID ASSY,CD 17<S>
11	8A-HCH-034-010		LID ASSY,CD 17<LL>
12	85-HC6-205-110		SHAFT,LID(300) HK
13	8A-HC7-204-010		SPR-T,OPEN
14	8A-HCH-013-010		CABI ASSY,CENTER 17<S>
14	8A-HCH-030-010		CABI ASSY,CENTER 17<LL>
15	8A-HC7-018-010		LEVER,OPEN
A	87-067-868-010		V+1.7-4 HL BLK
B	87-067-869-010		V+1.7-8 HL BLK
C	87-067-384-010		VT2+1.4-3.5 SW CH HL

COLOR NAME TABLE

Basic color symbol	Color	Basic color symbol	Color	Basic color symbol	Color
B	Black	C	Cream	D	Orange
G	Green	H	Gray	L	Blue
LT	Transparent Blue	N	Gold	P	Pink
R	Red	S	Silver	ST	Titan Silver
T	Brown	V	Violet	W	White
WT	Transparent White	Y	Yellow	YT	Transparent Yellow
LM	Metallic Blue	LL	Light Blue	GT	Transparent Green
LD	Dark Blue	DT	Transparent Orange		

CD MECHANISM EXPLODED VIEW 1/1



CD MECHANISM PARTS LIST

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
1	S0-A41-A20-600		PICKUP LASER ASSY
2	SM-10A-108-001		MOTOR ASSY SPINDLE
3	S0-M10-A10-900		MOTOR SLED ASSY
4	S2-311-A12-200		CHASSIS
5	S2-511-A23-200		GEAR MIDDLE
6	S2-511-A23-100		GEAR,SCREW
7	S2-511-A23-400		GEAR,RACK
8	S2-511-A07-900		SPINDLE SCREW
9	S4-S13-A00-200		SW,LEAF
10	S2-451-A18-100		HOLDER GEAR
A	SS-EXE-A04-000		SCR PAN PCS 1.4-2.2
B	SS-GXE-A00-300		SPECIAL SCREW
C	SS-EXE-A14-100		SPECIAL SCREW
D	SS-GXE-A00-202		SPECIAL SCREW M1.7-4.0

ACCESSORIES/PACKAGE LIST

REF. NO	PART NO.	KANRI NO.	DESCRIPTION
⚠ 1	87-B30-283-010		AC ADAPTOR,AC-D603ENC<411ALH>
⚠ 1	87-B30-286-010		AC ADAPTOR,AC-D603HCNC<411AHC>
⚠ 1	87-B30-285-010		AC ADAPTOR,AC-D603HRNC <EXCEPT 411AHC,410,411ALH>
2	87-B30-141-010		BAT,NB-301 NC(2PCS)<411ALH>
3	87-B30-326-010		HEADPHONE,HP-M048
4	8A-HCH-925-010		IB,EZ(EGF)C 412 F<411ALH>
4	8A-HCH-927-010		IB,EZ(PHNCZ)C 412 F<411ALH>
4	8A-HCH-926-010		IB,EZ(SID)C 412 F<411ALH>
4	8A-HCH-913-010		IB,HC(ECK)C F<411AHC>
4	8A-HCH-912-010		IB,HR(ECA)C F<411AHR>
4	8A-HCH-914-010		IB,LH(3L)C F<416,411ALH,411AHA>
4	8A-HCH-922-010		IB,YJ(ECA)C 410 F<410>
⚠ 5	86-YK1-001-110		ADAPTOR,CAP-6<416C>
⚠ 6	86-YK1-002-010		ADAPTOR,DC-602<416C>
⚠ 7	87-A90-312-010		PLUG,CONVERSION WTN-1157R1 <EXCEPT 411AHC,410,411ALH>

アイワ株式会社 〒110-8710 東京都台東区池之端1-2-11 ☎03(3827)3111 (代表)
AIWA CO.,LTD. 2–11, IKENOHATA 1–CHOME, TAITO-KU, TOKYO 110-8710, JAPAN TEL:03 (3827) 3111

737004
Printed in Singapore